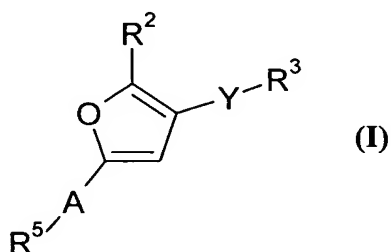


CLAIMS

1. A method of treating a condition which can be alleviated by antagonism of an EP4 receptor, which method comprises administering to a patient in need of treatment an effective amount of a compound of formula (I):



or a pharmaceutically acceptable salt thereof, wherein:

R² is H or an optionally substituted C₁₋₄ alkyl group;

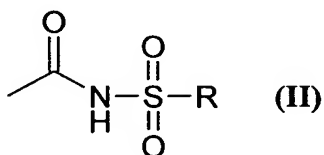
- 10 Y is either -(CH₂)_n-X-, where n is 1 or 2 and X is O, S, S(=O), S(=O)₂, or NR^{N1}, where R^{N1} is selected from H or optionally substituted C₁₋₄ alkyl, or Y is -C(=O)NR^{N2}-, where R^{N2} is selected from H, and optionally substituted C₁₋₇ alkyl or C₅₋₂₀ aryl;

- 15 R³ is an optionally substituted C₆ aryl group linked to a further optionally substituted C₆ aryl group, wherein if both C₆ aryl groups are benzene rings, there may be an oxygen bridge between the two rings, bound adjacent the link on both rings;

- 20 A is a single bond or a C₁₋₃ alkylene group; and

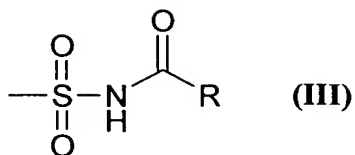
R⁵ is either:

- (i) carboxy;
- (ii) a group of formula (II):



; or

(iii) a group of formula (III):



wherein R is optionally substituted C₁₋₇ alkyl, C₅₋₂₀ aryl or NR^{N3}R^{N4}, where R^{N3} and R^{N4} are independently selected from optionally substituted C₁₋₄ alkyl;

(iv) tetrazol-5-yl.

2. The method according to claim 1, wherein R² is selected from H, methyl, CF₃ or iso-propyl.

3. The method according to claim 2, wherein R² is methyl.

4. The method according to claim 1, wherein Y is -(CH₂)_n-X-.

5. The method according to claim 4, wherein n is 1.

6. The method according to claim 5, wherein X is selected from O, S and NH.

7. The method according to claim 6, wherein X is NH.

8. The method according to claim 1, wherein Y is -C(=O)NR^{N2}-.

9. The method according to claim 8, wherein R^{N2} is selected from H, and optionally substituted C₁₋₄ alkyl.

10. The method according to claim 1, wherein the C₆ aryl groups of R³ are independently selected from those derived from benzene and heteroaryl groups, where the heteroatom or

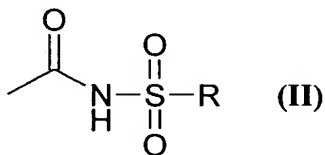
heteroatoms are nitrogen.

11. The method according to claim 10, wherein the C₆ aryl groups of R³ are independently selected from those derived
5 from benzene, pyridine and 1,3-pyrimidine.

12. The method according to claim 1, wherein A is a single bond.

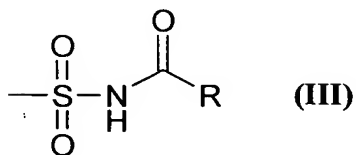
10 13. The method according to claim 1, wherein A is a C₁₋₃ alkylene group.

14. The method according to claim 1, wherein R⁵ is either:
(i) a group of formula (II):



; or

(ii) a group of formula (III):



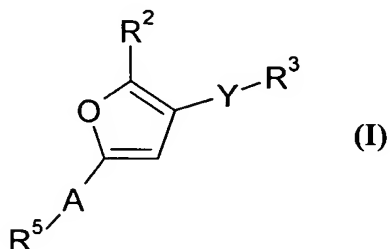
20 15. The method according to claim 14, wherein R is selected from an optionally substituted C₅₋₂₀ aryl group, and an optionally substituted C₅₋₂₀ aryl-C₁₋₇ alkyl group.

25 16. The method according to claim 1, wherein the condition alleviated by antagonism of an EP₄ receptor is a primary headache disorder.

17. The method according to claim 1, wherein the condition

alleviated by antagonism of an EP₄ receptor is migraines.

18. A pharmaceutical composition comprising a compound of formula (I):



5

or a pharmaceutically acceptable salt thereof, together with a pharmaceutically acceptable carrier or diluent, wherein:

R² is H or an optionally substituted C₁₋₄ alkyl group;

Y is either -(CH₂)_n-X-, where n is 1 or 2 and X is O, S,

10 S(=O), S(=O)₂, or NR^{N1}, where R^{N1} is selected from H or

optionally substituted C₁₋₄ alkyl, or Y is -C(=O)NR^{N2}-,

where R^{N2} is selected from H, and optionally substituted C₁₋₇ alkyl or C₅₋₂₀ aryl;

R³ is an optionally substituted C₆ aryl group linked to a

15 further optionally substituted C₆ aryl group, wherein if

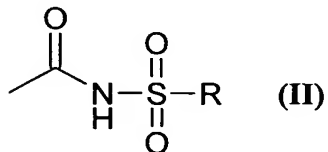
both C₆ aryl groups are benzene rings, there may be an oxygen bridge between the two rings, bound adjacent the link on both rings;

A is a single bond or a C₁₋₃ alkylene group; and

20 R⁵ is either:

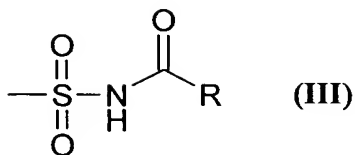
(i) carboxy;

(ii) a group of formula (II):



; or

(iii) a group of formula (III):

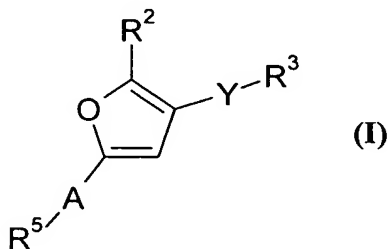


wherein R is optionally substituted C₁₋₇ alkyl, C₅₋₂₀ aryl or NR^{N3}R^{N4}, where R^{N3} and R^{N4} are independently selected from

5 optionally substituted C₁₋₄ alkyl;

(iv) tetrazol-5-yl.

19. A compound of formula (I):



10 or a salt, solvate and chemically protected form thereof, wherein:

R² is H or an optionally substituted C₁₋₄ alkyl group;

Y is either -(CH₂)_n-X-, where n is 1 or 2 and X is O, S, S(=O), S(=O)₂, or NR^{N1}, where R^{N1} is selected from H or

15 optionally substituted C₁₋₄ alkyl, or Y is -C(=O)NR^{N2}-, where R^{N2} is selected from H, and optionally substituted C₁₋₇ alkyl or C₅₋₂₀ aryl;

R³ is an optionally substituted C₆ aryl group linked to a further optionally substituted C₆ aryl group, wherein if

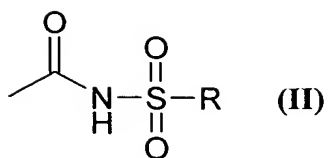
20 both C₆ aryl groups are benzene rings, there may be an oxygen bridge between the two rings, bound adjacent the link on both rings;

A is a single bond or a C₁₋₃ alkylene group; and

R⁵ is either:

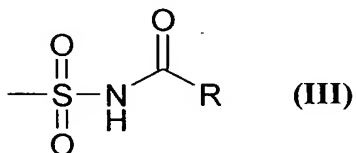
25 (i) carboxy;

(ii) a group of formula (II):



; or

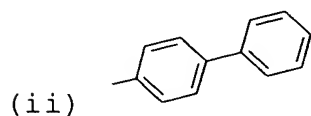
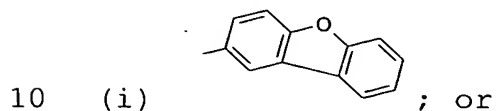
(iii) a group of formula (III):



wherein R is optionally substituted C₁₋₇ alkyl, C₅₋₂₀ aryl or
 5 NR^{N3}R^{N4}, where R^{N3} and R^{N4} are independently selected from
 optionally substituted C₁₋₄ alkyl;

(iv) tetrazol-5-yl,

except that when R² is methyl, Y is -CH₂-O- and R⁵ is carboxy
 or C₁₋₇ alkyl ester thereof, then R³ is not:



20. The compound according to claim 19, wherein R² is
 selected from H, methyl, CF₃ or iso-propyl.

15

21. The compound according to claim 20, wherein R² is
 methyl.

20

22. The compound according to claim 19, wherein Y is -
 (CH₂)_n-X-.

23. The compound according to claim 22, wherein n is 1.

25

24. The compound according to claim 23, wherein X is
 selected from O, S and NH.

25. The compound according to claim 24, wherein X is NH.

26. The compound according to claim 19, wherein Y is -
5 C(=O)NR^{N2}-.

27. The compound according to claim 26, wherein R^{N2} is
selected from H, and optionally substituted C₁₋₄ alkyl.

10 28. The compound according to claim 19, wherein the C₆ aryl
groups of R³ are independently selected from those derived
from benzene and heteroaryl groups, where the heteroatom or
heteroatoms are nitrogen.

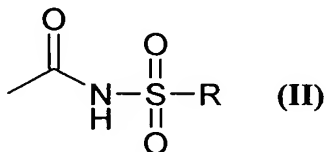
15 29. The compound according to claim 28, wherein the C₆ aryl
groups of R³ are independently selected from those derived
from benzene, pyridine and 1,3-pyrimidine.

20 30. The compound according to claim 19, wherein A is a
single bond.

31. The compound according to claim 19, wherein A is a C₁₋₃
alkylene group.

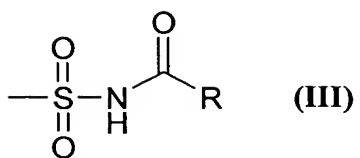
25 32. The compound according to claim 19, wherein R⁵ is
either:

(i) a group of formula (II):



; or

(ii) a group of formula (III):



33. The compound according to claim 32, wherein R is
5 selected from an optionally substituted C₅₋₂₀ aryl group, and
an optionally substituted C₅₋₂₀ aryl-C₁₋₇ alkyl group.